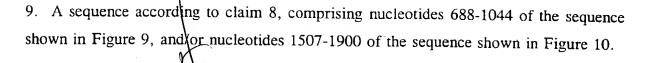
Claims

- 1. A nucleic acid sequence encoding a polypeptide having starch branching enzyme (SBE) activity, the encoded polypeptide comprising at least an effective portion of the amino acid sequence shown in Figure 4 or Figure 13.
- 2. A nucleic acid sequence according to claim 1, comprising nucleotides 21-2531 of the nucleic acid sequence shown in Figure 4, or a functionally equivalent nucleotide sequence which hybridises under stringent hybridisation conditions with the nucleic acid sequence shown in Figure 4.
- 3. A nucleic acid sequence according to claim 1, comprising nucleotides 131-2677 of the nucleic acid sequence shown in Figure 13, or a functionally equivalent sequence which hybridises under stringent hybridisation conditions with the nucleic acid sequence shown in Figure 13.
- 4. A nucleic acid sequence according to any one of claims 1, 2 or 3 comprising a 5' and/or a 3' untranslated region.
- 5. A nucleic acid sequence according to any one of the preceding claims, encoding a polypeptide having the amino acid sequence NSKH at about residue 697.
- 6. A nucleic acid sequence comprising at least 200bp and exhibiting at least 88% sequence identity with the corresponding region of the DNA sequence shown in Figures 4, 9, 10 or 13, operably linked in the sense or anti-sense orientation to a promoter operable in plants.
- 7. A nucleic acid sequence according to claim 6, comprising at least 300-600bp.
- 8. A sequence according to claim 6 or 7, comprising a 5'and/or 3'untranslated region.



- 10. A sequence according to claim 6, comprising the nucleotide sequence shown in Figure 10.
- 11. A replicable nucleic acid construct comprising a nucleic acid sequence according to any one of the preceding claims.
- 12. A polypeptide having SBE activity and comprising an effective portion of the amino acid sequence shown in Figure 4 or Figure 13.
- 13. A polypeptide according to claim 12, in substantial isolation from other polypeptides.
- 14. A polypeptide according to claim 12 or 13, having the amino acid sequence NSKH at about position 697.
- 15. A method of modifying starch in vitro, the method comprising treating starch to be modified under suitable conditions with an effective amount of a polypeptide according to any one of claims 12, 13 or 14.
- 16. A method of altering a plant host cell, the method comprising introducing into the cell a nucleic acid sequence comprising at least 200bp and exhibiting at least 88% sequence identity with the corresponding region of the DNA sequence shown in Figures 4, 9, 10 or 13, operably linked in the sense or anti-sense orientation to a suitable promoter active the host cell, and causing transcription of the introduced nucleotide sequence, said transcript and/or the translation product thereof being sufficient to interfere with the expression of a homologous gene naturally present in the host cell, which homologous gene encodes a polypeptide having SBE activity.
- 17. A method according to claim 16, wherein the host cell is from a cassava, banana, potato, pea, tomato, maize, wheat, barley, oat, sweet potato or rice plant.

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- 18. A method according to claim 16 or 17, comprising the introduction of one or more further nucleic acid sequences, operably linked in the sense or anti-sense orientation to a suitable promoter active in the host cell, and causing transcription of the one or more further nucleic acid sequences, said transcripts and/or translation products thereof being sufficient to interfere with the expression of homologous gene(s) present in the host cell.
- 19. A method according to claim 18, wherein the one or more further nucleic acid sequences interfere with the expression of a gene involved in starch biosynthesis.
- 20. A method according to claim 18 or 19, wherein the further nucleic acid sequence comprises at least part of an SBE I gene.
- 21. A method according to claim 20, wherein the further nucleic acid sequence comprises at least part of the cassava SBE I gene.
- 22. A method according to any one of claims 16 21, wherein the host cell is selected from one of the following: cassava, banana, potato, pea, tomato, maize, wheat, barley, oat, sweet potato or rice.
- 23. A method according to any one of claims 16-22, wherein the altered host cell gives rise to starch having different properties compared to starch from an unaltered cell.
- 24. A method according to any one of claims 16-23, further comprising the step of growing the altered host cell into a plant or plantlet.
- 25. A method of obtaining starch having altered properties, comprising growing a plant from an altered host cell according to the method of claim 24, and extracting the starch therefrom.
- 26. A plant or plant cell into which has been artificially introduced a nucleic acid sequence comprising at least 200bp and exhibiting at least 88% sequence identity with the corresponding region of the DNA sequence shown in Figures 4, 9, 10 or 13, operably

linked in the sense orientation to a promoter operable in plants, or the progeny thereof.

- 27. A plant according to claim 24, altered by the method of any one of claims 16-22.
- 28. Starch obtainable from an altered plant according to claim 26 or 27, having altered properties compared to starch extracted from an equivalent but unaltered plant.
- 29. Starch obtained from an altered plant according to claim 26 or 27, having altered properties compared to starch extracted from an equivalent but unaltered plant.
- 30. Starch according to claim 28 or 29 obtained from an altered plant selected from the group consisting of:- cassava, banana, potato, pea, tomato, maize, wheat, barley, oat, sweet potato and rice plants.
- 31. Starch according to any one of claims 28, 29 or 30, having increased amylose content compared to starch extracted from an equivalent but unaltered plant.